

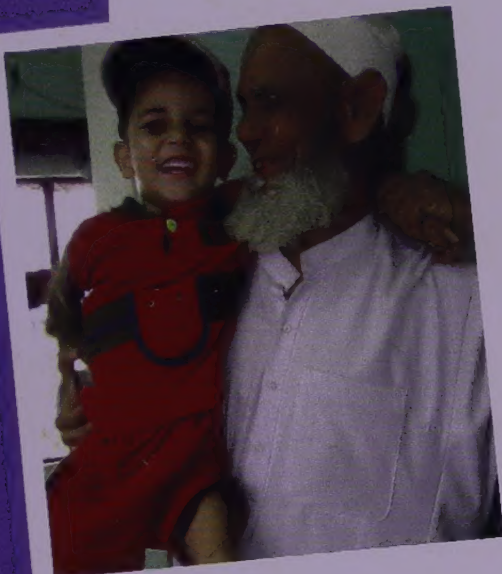
*Child and adolescent
injury prevention*



A WHO PLAN OF ACTION



World Health
Organization



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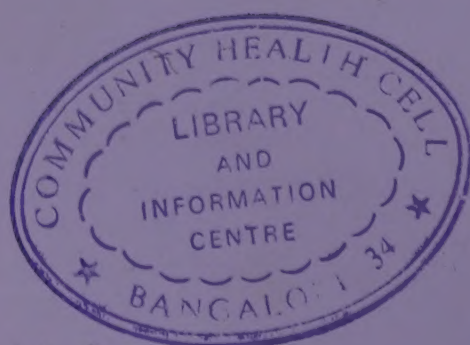
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**Child and adolescent injury prevention:
A WHO plan of action
2006–2015**



**World Health
Organization**

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Transcript

The first part of the transcript is a list of names and their corresponding page numbers. The names are listed in a column on the left, and the page numbers are listed in a column on the right. The names are: John, Mary, Peter, Paul, and David. The page numbers are: 1, 2, 3, 4, and 5. The list is as follows:

Name	Page
John	1
Mary	2
Peter	3
Paul	4
David	5

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Foreword

Injury and disability mar millions of young lives each year. Annually more than 875 000 children and adolescents under the age of 18 years die and tens of millions more require hospital treatment following an injury. For survivors the temporary or often times permanent impairment injuries cause and the resulting need for care and rehabilitation have far-reaching impacts on a child or young person's prospects for health, education and social inclusion as well as their parents' livelihood.

Apart from the loss of these young lives with all their potential, the effect of injuries on children and adolescents is not limited to the injuries they alone may suffer – death, injury or disability to a sibling, parent or other family member can also alter their lives forever.

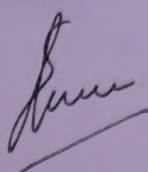
The unequal burden of injury reinforces a need to address the problem. The burden falls most heavily on children and young people in poorer countries and on those from poorer families in all societies. More than 95% of injury deaths among children and adolescents occur in low- and middle-income countries. However, even in high-income countries, injuries are still a major cause of death for children and adolescents, accounting for about 40% of the deaths among those aged between 1 and 18 years.

The large and growing toll of child injury death, the significance of serious injury, and the frequent long lasting effects of injury on children and adolescents have resulted in the World Health Organization stepping up its injury prevention efforts. Fortunately, the news is good: there are ways to prevent child and adolescent injuries. The experience of many high-income countries is that a public health approach – rigorous scientific analysis of the problem, research on its causes, implementation of prevention strategies, and the broad replication of measures which have proven to be effective – has lead to substantial reductions. These include interventions on seat-belts, child restraints, helmets, flame resistant clothing and fencing around areas of water, and, to prevent violence-related injuries, they include home visitation programmes, family counselling, substance abuse programs and separate locked storage of firearms and ammunition.

This document *Child and adolescent injury prevention: a WHO plan of action* presents a framework for the World Health Organization's approach to child and adolescent injury prevention, to guide its efforts at country, regional and global levels to reduce fatal and non-fatal injuries among children and young people. The plan results from an extensive process of consultation with organizations and individuals concerned with child health, and with child injury prevention in particular. It focuses on the main areas where WHO has added value in relation to injury prevention for children and adolescents, including surveillance, research, prevention, capacity development and advocacy.

The World Health Organization could not take on this task alone, and will work in partnership across sectors to implement this plan. The work will involve a wide range of partners including: child and adolescent injury prevention organizations; WHO collaborating centres for injury and violence prevention; nongovernmental organizations; groups concerned with disability and rehabilitation; organisations representing persons affected by injury and violence and government representatives.

I invite you to join us in our efforts to prevent these tragic and avoidable deaths and injuries of children and young people around the world.



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Part I

How children are injured

1. Introduction

Injury is a major killer of children and adolescents throughout the world, responsible for over 875 000 deaths in children and young people under the age of 18 years each year (1). Tens of millions more require hospital care for non-fatal injuries, many of whom are left with some form of disability, which all too often has lifelong consequences.

The burden of injury is unequal in that it falls most heavily on the poor, that is to say, the burden is greatest on children and adolescents in the poorer countries of the world and within any given country, on those from low-income families. Overall, more than 95% of all injury deaths in children and adolescents occur in low- and middle-income countries. Although the child injury death rate is much lower among children and adolescents from high-income countries, injuries are still a major cause of death, accounting for about 40% of all child and adolescent deaths in these countries (*see facing table*).

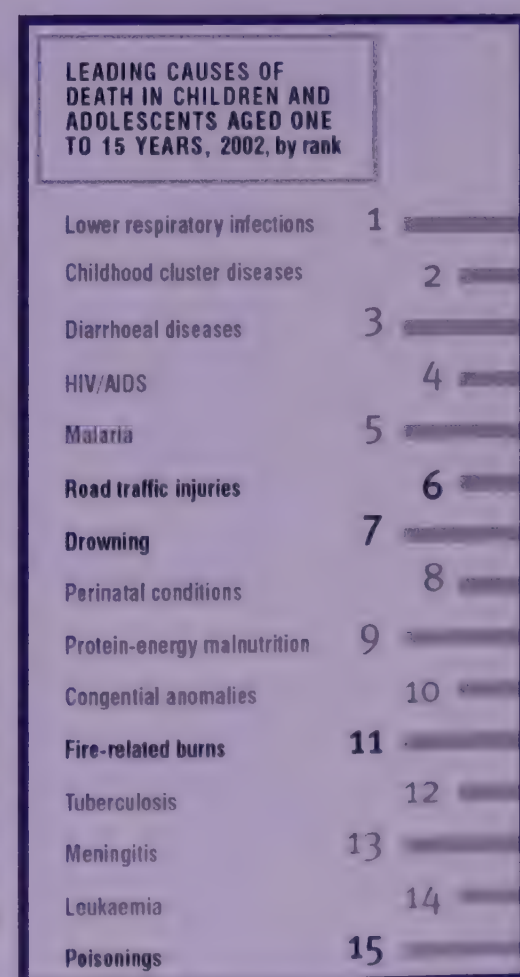
Disconcertingly, as data collection systems improve, it has become increasingly obvious that both the absolute numbers and rates of child and adolescent injury and death are rising in the low- and middle-income countries, in tandem with growing levels of urbanization and motorization. The combination of increasing incidence and recent successes in reducing other causes of death, particularly infectious disease, means that the significance of injury is growing such that it now figures prominently among the list of leading causes of death in children and adolescents (*see chart*).

These trends can, however, be reversed. The experience of many high-income countries shows that through careful analysis and appropriate action, child and adolescent injuries can be prevented. Among the member countries of the Organisation for Economic Co-operation and Development (OECD), for example, the number of injury deaths among children under the age of 15 years fell by half between 1970 and 1995 (2). This reduction has been attributed to a combination of research, data system development, the introduction of specific prevention measures, changes in the local environment, legislation, public education, improvements in the level and quality of emergency assistance and trauma care, and project evaluation. Regrettably, until relatively recently, little or no attention has been paid to the issue of injuries in the low- and middle-income countries. The lack of awareness and understanding of the problem – and given the particular circumstances that these countries face – has meant that appropriate interventions for injury prevention have not been implemented to the same extent as they have been in the high-income countries.

Child and adolescent injury deaths		
	Injury deaths ^a (% of all deaths)	Injury death rate ^a (per 100 000 population)
High-income countries	41	7.7
Low- and middle-income countries	13	37.2

^a Data refer to persons aged 1–14 years.

Source: WHO Global Burden of Disease project, 2002, version 5.



Global concern for the health and welfare of children and adolescents

The central objective of the World Health Organization (WHO), namely, *"the attainment by all peoples of the highest possible level of health"*, by definition embraces children and adolescents. Specific concern for the lives, health and well-being of children and young people is, however, voiced in a series of separate international agreements and initiatives. These agreements, which are briefly described below, reflect not only this broader collective concern but also the international consensus on what needs to be done.

Parties to the CRC agree to "take all appropriate legislative, administrative, social and educational measures to protect the child from all forms of physical or mental violence, injury or abuse, neglect or negligent treatment, maltreatment or exploitation, including sexual abuse" (3).

Article 19 of the Convention on the Rights of the Child

Convention on the Rights of the Child (CRC)

The human rights of children and the standards to which all governments must aspire in realizing these rights, are concisely articulated in the Convention on the Rights of the Child (3). This United Nations convention was drafted as part of a global consultation process, spanning a 10-year period, and was adopted during a United Nations General Assembly session in November 1989. The Convention affirms that each child has the right to the highest attainable level of health and the right to a safe environment.

As the majority of United Nations Member States have ratified the Convention, it represents a powerful statement of the collective views on the responsibilities towards children. At present, however, there is some concern that the intentions of the Convention are not being fully implemented in practice and that a more concerted effort is required to fulfil its commitments.

Millennium Development Goals

In September 2000, the General Assembly of the United Nations adopted a series of Millennium Development Goals. One of these goals, the fourth, is the reduction, by two thirds, of the mortality rate in the under-fives between 1990 and 2015 (4). Because of the large number of deaths from infectious diseases and neonatal causes in children under the age of 1 year, injury only represents between 1.5% and 2.0% of deaths in this age group. However, for children aged between 1 and 4 years, injuries are a more significant cause of death, accounting for just over 6% of all deaths.

United Nations Member States are committed to meeting all eight Millennium Development Goals by 2015. However, recent reports and meetings have expressed concern over the current pace of progress towards meeting these goals and, as in the case of the CRC, greater efforts are called for in order to remedy the situation.

A world fit for children

In May 2002, the United Nations General Assembly held a Special Session on children. The outcome was a document entitled *"A world fit for children"*, which sets out a series of goals for children and adolescents. One of the goals in the plan of action prescribed in this document is specific to injuries and calls upon all Member States to reduce child injuries due to accidents or other causes through the development and implementation of appropriate preventive measures (5).

More recently, the international focus on children has resulted in a concerted effort to examine in more detail the factors that influence child survival. Of particular note is a series of papers published in the *Lancet* in 2003 (6). The Bellagio papers, as they since have become known, provide new estimates of the numbers and causes of child deaths (including injuries), and suggest that two thirds of the nearly 11 million annual deaths among children under the age of 5 years can be prevented by universally implementing just 23 cost-effective interventions.

It is clear from the above discussion that child survival has become an important issue globally, forming part of a growing broader collective concern for the health and well-being of children and young people. Indeed, child survival has been described by some as "the most pressing moral dilemma of the new millennium" (7). As a leading cause of death and disability among children and adolescents worldwide, child injury prevention is of particular relevance to this wider issue and is thus central to any international effort to improve the health of children and adolescents.

"Millions of children will continue to die unnecessarily every year, unless there are major shifts in policy and funding at international and country levels. We can wait no longer. Knowledge must be translated into practice" (6).

Child and adolescent injury prevention in context

On the basis of cause of death data reported by its Member States, WHO estimates that at least 875 000 children and adolescents under the age of 18 years die as a result of either an unintentional injury ("accident") or an intentional injury (i.e. violence or self-harm) each year. This is equivalent to 40 deaths per 100 000 children. However, community surveys being undertaken by the United Nations Children's Fund (UNICEF) indicate that the annual death toll might be even higher than this (8).

At least 875 000 children and adolescents under the age of 18 years die as a result of injury each year, putting unintentional injury firmly among the leading causes of death in this age group.

A study conducted in 2001 by the UNICEF Innocenti Research Centre ranked 26 of the world's richest countries according to their rates of injury death among children aged 1–14 years (2). The study showed that in all 26 industrialized countries surveyed, injury was the leading cause of death for children and that mortality is only the tip of the injury burden iceberg. On the plus side, in many of the countries examined the risk of a child dying from injury had halved across a 20-year period, a finding that was attributed to concerted and skilled prevention efforts. The study further concluded that for "... a child born into the developed world today, the chances of death by injury before the age of 15 are approximately 1 in 750 – less than half the level of 30 years ago" (2). The league table revealed substantial differences between countries in the level of child injury death; for instance, there is a five-fold difference in child injury death rates between the top and bottom countries, with the group of countries at the bottom having at least twice the rate of child injury death as the group at the top. The magnitude of the range of death rates is particularly significant, indicating just how many additional lives could be saved if countries in the bottom half of the rankings achieved injury death rates that were on a par with those at the top.

From a global perspective, the variation in the significance of injury as a cause of death and ill-health is even greater. The percentage that injury represents of all deaths varies markedly across world regions (see map on page 4), and also by country, age, gender and level of income. Injury deaths as a percentage of all deaths ranges from just 2% in those under 1 year of age in low- and middle-income countries to nearly 50% in 10–14 year-olds from high-income countries. Global data on non-fatal injuries are incomplete, especially in relation to the medium- and long-term health effects, including disability. Data of this nature are particularly sparse for the low- and middle-income countries. However, available data for high-income countries suggest that non-fatal injuries are hugely important, not just because of the demand placed on health resources but also in terms of their associated social and economic costs, factors which,

when taken together, mean that non-fatal injuries are likely to make a substantial contribution to the overall burden of injury. For instance, according the Innocenti study, in the OECD nations alone annually there are 50 million accident and emergency department visits and 4 million children hospitalized for injuries (2). In sum, while absolute numbers, proportions and rates vary, it is clear that injury is a universally significant cause of death and hospitalization among children and adolescents throughout the world.

REGIONAL DISTRIBUTION OF CHILD AND ADOLESCENT INJURY MORTALITY RATES, 2002 (under 15 years)



2. Injury: prevalence, risk factors and impacts

Definitions and classifications

Age groups

There is no universally agreed definition as to what constitutes a child or an adolescent. The defined age range of a child or adolescent can, however, have important implications; for example, it can govern the age at which young people enter the formal workforce and/or acquire the legal right to drive a vehicle or to drink alcohol. It is interesting to note that a "child" in one setting may be a "worker" in another.

For the purpose of this document a child or adolescent is a person under the age of 18 years.

Definitions in current use tend to have evolved either through common practice, as a result of legal issues or simply from convenience. Some definitions are linked to changes in development and ability. As children age, grow and develop, their physical and cognitive abilities, their degree of dependence, the activities they undertake and their risk behaviours change substantially. Often it is these factors that are found to be associated with variations in the incidence and pattern of injury and death.

This document follows the practice of the UN Convention on the Rights of the Child, which stipulates that a 'child' means every human being below the age of 18 years (3). When referring to the problem of injury in children and adolescents, however, the focus of attention is primarily on those aged 1–17 years (injury being a less significant cause of death for infants under the age of 1 year).

Injury classification

Injuries can be classified in a number of ways, either according to whether or not they are deliberately inflicted (and by whom), and/or according to the mechanism of the injury (see *adjacent box*). In most cases, the classification of injury by intent is fairly straightforward. However, in relation to children, it is more likely that there will be some “grey” area. For example, a child losing their balance and falling into a fire clearly constitutes an unintentional injury, but if the fall occurs when the child has been left unsupervised for long periods or after the child has been struck, then the question of neglect or abuse arises. In terms of the intention to harm, the gradient ranges from actively intending to hurt or harm a child at one end of the spectrum through to neglect, where a child is injured through lack of reasonable care or failure to protect, at the other.

Patterns of injury

Overall, the leading causes of injury death among children and adolescents are road traffic crashes, drowning, fire-related burns, self-harm and violence (see *figure below*). It is important to note that the pattern of non-fatal injuries is very different to that of injury deaths. For example, falls are commonly a leading cause of injury but not necessarily a leading cause of injury death.

Classification of injuries

WHO, following the International Classification of Disease (ICD-10), uses the following classification scheme for injuries (9):

Unintentional (i.e. "accidental"), for example:

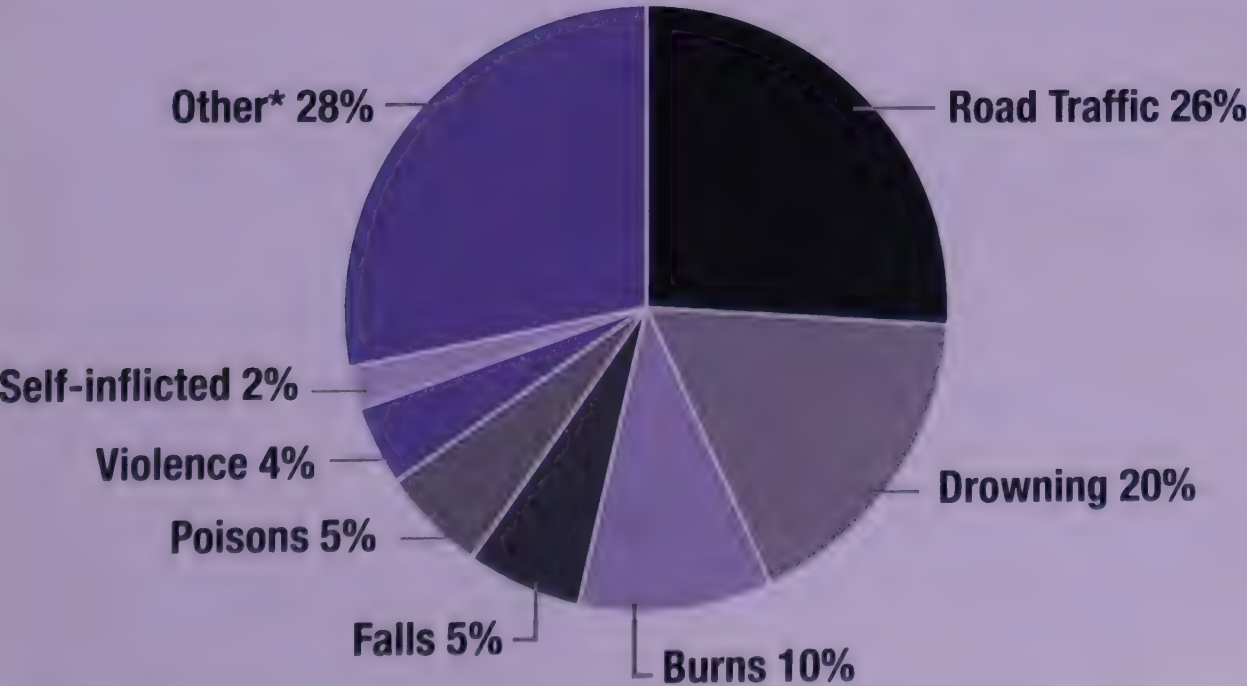
- road traffic crashes,
- falls,
- burns, flame, scalds,
- drowning,
- poisoning,
- animal bites.

Intentional (i.e. deliberate), for example:

- interpersonal violence (e.g. homicide, sexual violence),
- self-harm (e.g. attempted suicide, self-mutilation).
- Legal interventions
- War, civil insurrection

Undetermined intent

INJURY DEATHS IN CHILDREN AND ADOLESCENTS UNDER THE AGE OF 15 YEARS, BY CAUSE, 2002



* "Other" includes deaths due to smothering, choking, venomous animals, electrocution, firearm incidents and war.
Source: WHO Global Burden of Disease project for 2002, version 5.

Child injury as a life-cycle issue

Injuries are responsible for close to 3% of the nearly 11 million deaths that occur annually in children under the age of 5 years. Although in the case of infants under 1 year, injury only represents 1–1.5% of all deaths, for those aged 1–4 years, the proportion rises to 6%. As a cause of death, injury continues to increase in significance as children age: for children aged 5–9 years injury is associated with 25% of deaths, and for those aged 10–14 years, injury accounts for almost a third of deaths (31%). The proportion of deaths due to injury for those aged 15–17 years is likely to be the same as, or higher than, that for those aged between 10 and 14 years (1). On average, for children in the age group 5–14 years, injury accounts for more than a quarter (27%) of all deaths worldwide.

The finding that injury prevalence is highly associated with age and stage of development is not surprising. In fact, the rate of injuries rises the moment babies start to move and explore their world. This is because children inhabit a world built for adults but interact and deal with the world differently to adults. Their size, mass, bodily proportions and surface-to-mass ratio are all factors that contribute to increasing their risk of dying from a specific type of injury. For example, a hot liquid scald of a given size is likely to be more dangerous to a child than to an adult because of the greater proportion of skin affected; likewise, the toxic dose of a poisonous substance is lower for children because of their smaller mass. Exploration of their surroundings is an essential part of a child's development but it is this very exploration – combined with their lack of understanding of hazards and the nature of their immediate environment – that places them at risk: a baby explores its world by putting things in its mouth oblivious to any harm that might accrue from so doing or steps onto water not understanding that it is not solid. The ability to judge hazards takes time to develop and in very young children its absence further increases their risk of injury.

The stage of development of a child, how a child interacts with the world and the different activities it undertakes as it matures all help to explain the strong association between life-stage and the rate and type of injury. For instance, among those aged under 1 year, fires, road traffic crashes, drowning and falls are the leading causes of injury death. In the 1–4 year age group, as children start to move more independently, drowning becomes the leading cause of injury-related death followed by road traffic crashes and fires, all three of which combined account for two thirds of injury deaths. Similarly, most injury deaths in young children can be categorized as unintentional, but as children age the proportion of intentional injury begins to rise. Whereas in children under 10 years of age intentional injury only accounts for around 5% of injury deaths, in those aged 10–14 years, the percentage rises to about 15%. Above 15 years of age, as many as one third of injury deaths are classified as intentional.

Child injury and gender

Injury and injury death are also highly associated with gender. In the under fifteens, there are, on average, 25% more injury deaths among boys than there are among girls (1). A number of factors contribute to the male excess in injury mortality, including differences in exposure to hazards, behaviour and socialization as well as differences in social treatment.

The gender difference varies by the type of injury and also by age. The number of male deaths exceeds that of females in nearly all categories of injury, with the exception of fire-related burns (*see figure on page 7*). The female excess in fire-related burns is particularly noticeable in certain parts of the world, where female adolescent deaths can exceed males by more than 50% (1). In the low-income countries of the Eastern Mediterranean Region, for example, flame death rates for females aged 10–14 years are 60% higher than those for males (1), a finding which can be attributed, at least in part, to the fact that the responsibility for cooking – mainly on open fires – falls to young girls and women, many of whom wear traditional-style, flammable clothing.



INJURY DEATHS IN CHILDREN AND ADOLESCENTS UNDER THE AGE OF 15 YEARS, BY CAUSE AND SEX, 2002

Source: WHO Global Burden of Disease project for 2002, version 5.

In most regions and countries, the gender gap in injury deaths increases with age. At the global level, injury death rates among children under the age of 1 year, as well as those aged 1–4 years, are about the same for males and females. However, in children aged 5–9 years male death rates are a third higher than female rates, a discrepancy that increases to 60% among those aged 10–14 years. Adolescents aged 15 to 17 years show an adult profile, with males accounting for more than 86% of all injury deaths (1).

The male:female difference in injury death rates persists across country income status but tends to be more pronounced in the higher income nations. In the low- and middle-income countries, for those under 15 years the male injury death rate is about 20% higher than that for females, while in high-income countries, the male injury death rate is 50% higher than the female (1).

Risk factors

While injury is a significant risk for children and adolescents throughout the world, its incidence and effects are highly unequal. Globally, the vast majority of child and adolescent injury deaths (95%) occur in low- and middle-income countries, where the injury death rate for children under 15 years of age is about five times that in high-income countries (1).

Inequalities in injury risk are apparent at a number of levels, between regions, and between and within countries. In addition to regional and country differences, there are also clear social and economic

Poverty is an important social factor associated with most types of injury and violence among children.

inequalities between population groups or particular subgroups. Poverty is an important risk factor and is strongly associated with most types of injury and violence among children. In low- and middle-income countries, for instance, poorer children are more likely to be pedestrians, to live in homes where open flames are needed for cooking, heat and light, and to play in spaces that are also workplaces and where machinery and dangerous chemicals may be present. In high-income countries, studies have shown that the children of unskilled workers are three to four times more likely to die from injury than are the children of skilled workers (10). Injury death rates among children of indigenous people,

such as those from Australia, also show a steep gradient (11). Moreover, in countries where child injury death rates have fallen overall, the greatest improvements are generally observed among the more affluent, as opposed to those living in lower socioeconomic households (10).

In addition to the biological (e.g. age, development stage) and gender factors noted previously, experience across the world has shown that a number of other risk factors, including the absence of protective factors and the nature of the local environment, are also important determinants of the risk of both fatal and non-fatal injuries in children and adolescents. Environmental factors, for example, the presence of basic infrastructure such as footpaths and safe crossing zones (which effect the separation of pedestrian and vehicle traffic) and the nature and type of housing, play a particularly significant role in shaping the exposure to risk and injury causation and thus the incidence and pattern of child injury. In the case of road transport, the number, type and quality (i.e. construction standards) of vehicles, the presence of footpaths and road crossings, the quality of roads and road traffic infrastructure, and the legal requirements for driving and for the use of restraints (and the degree to which they are enforced and followed) all have an impact on the environment for children, the degree of risk they face in their daily lives and, in turn, on the level and pattern of road traffic injury. In the case of housing, regulations governing the construction of homes and the use of safety measures such as smoke alarms, safety glass and balustrades, all measures widely adopted in high-income countries, have done much to reduce the risk of house fires and falls and have lead to concomitant reductions in injury deaths from these causes.

The availability and access to medical care is another important factor that can influence not only the likelihood of surviving an injury but also its severity in the longer term. The speed and quality of emergency services, the level, effectiveness and affordability of trauma care, and the availability and quality of health care services for rehabilitation all impact survivability and the degree and duration of any impairment associated with injury. Although these factors are significant for all injured individuals, differentials in access to care adds further to the extra burden of injury experienced by disadvantaged population groups.

Economic and social costs

"The true scale of the childhood injuries tragedy should be gauged by its depth as well its breadth - by asking not only how many families are affected but also how severely. And in this case the multiplier - the depth of grief and anguish involved in the death of a child - is beyond all measure" (2).

Although there is a dearth of literature on the costs of child and adolescent injury, particularly from the low- and middle-income countries, it is clear that the economic and social burden associated with such injuries is substantial. Isolated studies from high-income countries have shown injury to be a major contributor to hospital and health-care costs. For instance, in the United States of America, it is estimated that unintentional injury among children and adolescents aged 1–19 years accounts for 11% of all hospital admissions, 39% of emergency department attendances and 13% of medical costs (12).

Aside from the direct medical costs, injury and injury deaths incur huge indirect costs, both economic and social. Death, injury and disability can have major impacts on individuals and their families, and in many cases these impacts are lifelong. This wider burden of child and adolescent injury can be described in a number of ways. The most compelling is as *"..anguish beyond measure"* (2). The sudden and unexpected death of a child has a profound emotional impact on families. Beyond this, child

and adolescent injuries can have far-reaching social and monetary implications for families. When considering this impact, it is not only injury to a child that is of consequence – injury or disability to a sibling or other family member can result in a child or young person having to leave school to support the family. Research in Asia and elsewhere shows that injury is a leading cause of parental mortality. A study in Bangladesh, for example, found that for children under 18 years of age 43% of maternal deaths were the result of an injury (8). In Mexico, road traffic crashes rank second as a cause of children becoming orphans (13). The loss of a breadwinner frequently has the effect of pushing a family further into poverty (14).

The fact that direct medical costs are only part of the total cost of injury is particularly apparent in relation to child abuse, child neglect and violence involving children and adolescents. Problems of this nature are often life-altering and have lifelong health impacts. Much of the incidence of these types of injuries is hidden, and so too is the cost of their treatment. Detailed information is limited but nevertheless points to not insignificant associated costs. Data from Brazil, for instance, indicate that violence alone is responsible for two thirds of hospital admissions among adolescents. Studies in the United States have produced estimates of the cost per hospital admission for abuse and neglect that are in the range of US\$ 20 000–40 000 per case (15).

3. Are child and adolescent injuries preventable?

Injuries are not inevitable. Experience has shown that the majority can be prevented, or at least controlled. In fact, a number of countries have achieved remarkable reductions in their child and adolescent injury death rates, in some cases by more than 50%. Illustrations of what is possible include the following:

Child and adolescent injuries are not inevitable – they can be prevented.

- Serious domestic hot water scalds among children have been reduced by as much as 60% by lowering the temperature of domestic hot water systems (16).
- Child fall deaths from windows have been reduced by 50–90% by a combination of education and the covering of windows in places where there are young children (17).
- Between 1964 and 1992, poisoning deaths among children under 5 years were halved as a result of the introduction of measures designed to limit the access by young children to medications, such as the use of child-resistant packaging for pharmaceuticals and reductions in dosages (18).
- Road traffic injury death rates in children have been reduced by speed reduction measures, traffic calming schemes, and the use of child restraints and bicycle helmets (19).
- Child pedestrian deaths and injuries have fallen following the implementation of measures to reduce children's exposure to traffic, such as the construction of pavements and crossing zones.

As the causes of child and adolescent injury are often multifaceted and interrelated, a wide range of measures is required if prevention efforts are to achieve their full potential. Preventive measures can be conveniently categorized as either primary, i.e. aimed at preventing an injury from happening in the first place, or secondary, i.e. aimed at reducing the severity of the injury arising from any given incident. While tertiary measures are those that reduce the impact of injury after it has occurred. Primary and secondary preventive measures which have been used to address child and adolescent injury, both separately and in combination include legislation, regulation and enforcement; product modification; environmental modification; supportive home visits; promotion of safety devices; education and skills development; and community-based interventions (19). Multidimensional strategies, i.e. strategies that include two or more elements, tend to be the most effective, in particular, those which include some form of education, legislation and environmental modification (see box on page 10).

Injury prevention strategies

Legislation, regulation and enforcement. Laws and other forms of regulation have proved to be among the more powerful mechanisms for preventing injury. For example, there is strong evidence to suggest that the introduction of child safety seat laws has led to increased levels of restraint use and reduced road traffic injury rates (20).

Product modification. One of the best examples of how changes to the design of a product can contribute to reducing the incidence of childhood injuries is provided by the development of child-resistant closures for pharmaceuticals and other household chemical products. Innovations of this type have helped to reduce the number of childhood deaths from poisoning in several high-income countries. Victoria, Australia, for instance, has reported reductions of 45–60% in child poisoning mortality and 60–90% in emergency department attendance for injuries of this type (21).

Environmental modification. Modification of the local environment – to make it more “user-friendly” – has become an important approach in injury prevention, benefiting not just children but individuals of all ages in the passive protection it affords. Assessments of traffic calming schemes on crash-related deaths and injuries in all age groups have repeatedly shown that area-wide traffic calming schemes in towns have the potential to reduce road traffic injuries (22, 23).

Supportive home visiting. Home visits have been used to meet a wide range of objectives, including the improvement of the home environment, family development and the prevention of behavioural problems in children. Early childhood home visits have been shown to have substantial positive effects, especially in relation to the prevention of child maltreatment (24).

Education, skills development. While the training of people from a wide spectrum of disciplines in injury prevention is likely to have been a contributory factor in the reductions in child injury deaths that have been seen in high-income countries, the value of educational programmes as a form of injury prevention has been the subject of considerable debate in recent years. Where there has been specific training, pedestrian skills training programmes have been shown to improve selected behavioural skills (25). There are also indications that swimming training in children of school age has value (26–28), but results of more detailed studies on the relationship between swimming training and drowning prevention, currently underway, are needed before firm conclusions regarding the true merits of such measures can be drawn.

Community-based studies. Given the broad range of injury types and possible counter measures, injury prevention lends itself particularly well to community-based approaches. The use of multiple interventions, repeated in different forms and contexts, helps to develop a culture of safety within a community (29). Of particular note in this regard is the Safe Communities model, which has repeatedly been shown to be successful in reducing injuries in whole city or local government area populations (30).

Much of the world literature relating to child and adolescent injury prevention and evaluation is dominated by studies from a few high-income countries. Nevertheless, since physical relationships are universal, many injury counter measures, for example, seat belts, motorcycle helmets, child restraints, child-resistant packaging and barrier fencing, are likely to have relevance globally. However, proven interventions in high-income countries may not always be readily transferable to low- and middle-income countries. The more problematic component of intervention transfers tends to be the implementation process, which is less well understood and is likely to be regionally and locally specific. Consequently, proven interventions in high-income countries may require careful adaptation (31) and/or evaluation in trials before they can be transferred successfully to low- and middle-income countries.

4. What are the challenges?

Although some progress has undoubtedly been made in recent years, reductions in child and adolescent injury deaths, especially in low- and middle-income countries, represent a major challenge for the future. The main barriers to developing and implementing child and adolescent injury prevention interventions across the world are:

- fatalism – the unfounded belief that injuries are unpreventable “acts of god”;
- a lack of awareness among policy-makers that injuries are a significant cause of death in childhood and adolescence, and that many deaths can be avoided;
- a lack of human resources to address the issue;
- resources that are neither commensurate with the size of the problem nor the opportunities for prevention;
- poor data on the patterns of injury incidence and etiology, particularly in places where the burden is greatest;
- failure to fully implement measures known to be effective;
- insufficient attention to the development and testing of prevention measures in low- and middle-income countries;
- a lack of political commitment and understanding of injury prevention in general;
- the absence or poor quality of emergency care and rehabilitation services for victims of injury, especially in the low- and middle-income countries, a factor which adds significantly to the burden of injury.

It is often the case that countries with the highest burden of child injury also have the lowest capacity and resources with which to address injury largely because these countries also have some of the worst disease burdens for children and thus attention is focused elsewhere. Such conflicting demands on precious resources represents an additional challenge to those advocating for injury prevention. The problems are exacerbated by the fact that injury prevention is by its very nature cross-disciplinary and multisectoral. While effective action can be taken in individual areas of responsibility, best practice intervention faces the challenge of drawing together multiple stakeholders across many sectors. Although ministries of health usually bear the lion's share of the direct burden of injury, most influence in prevention efforts comes from other sectors such as education, transport, construction, the legislature and law enforcement. Unfortunately, these stakeholders often have limited incentives to address injuries and usually have other priorities.

Some of the main barriers and challenges identified above are discussed in more detail below.

Data limitations

Data on the patterns of injury are essential for identifying priority issues and high-risk groups, and also for understanding the etiology of injury. Availability of, and access to, information are therefore key factors for identifying pathways to prevention. By the same token, a lack of data can hamper the development of a compelling case for action as well as for priority setting, research, the development of interventions and also the monitoring and evaluation of interventions. While ready access to data, and the detailed analysis of these data, has without doubt been instrumental in achieving child injury prevention success in the high-income countries, elsewhere data on child and adolescent death and injury are generally poor or missing.

A key challenge in injury prevention is thus to establish reliable estimates of the level and pattern of child and adolescent injury and death, especially in the low- and middle-income countries. To this end, the volume, quality and availability of national and regional data needs to be increased through a combination of better data collection systems, improved hospital surveillance and greater numbers of community-based surveys.

It is estimated that of the 192 WHO Member States, only 23 currently have injury data that are almost complete, of high quality and classified according to standardized coding systems (32). As noted above, data tend to be weakest where the problems are greatest; coverage is particularly poor in relation to child drowning, burns, poisoning and road traffic injuries in low- and middle-income countries. In these countries, data on the evaluation of interventions and the cost of injuries are also largely absent or, at best, weak. Representative, high-quality data relating to hospital usage are similarly skewed, i.e. available in high-income countries but rare in countries with the highest injury rates. Finally, because of the specific difficulties involved, information on the incidence, risk factors for, and the implications of interpersonal violence and self-harm is poor everywhere.

The general lack of health utilization data, in particular, of high-cost hospitalizations and trauma care, results in underestimation of the burden of injury in many countries, and limits analysis of the conditions and risk groups that use such expensive and scarce care. Population denominators for health-facility based data collection systems are also problematic, again especially in the low- and middle-income countries. Furthermore, barriers to access to care coupled with the fact that a high proportion of trauma deaths occur outside hospital, mean that many injuries and deaths are not counted in facility-based data collection systems in these countries.

Research

The reductions in injury mortality that have been achieved in the high-income countries have been achieved as a result of the application of scientifically-based programmes of child and adolescent injury prevention. However, the research and the tools that have brought about such successes relate specifically to the situation and circumstances of the high-income countries. Low- and middle-income countries present unique challenges and require interventions that have been adapted to, or developed specifically for, the prevailing cultural and social and economic circumstances. The development of such interventions, coupled with their testing and checking, their implementation and their evaluation relies on research. Indeed, research is central to all phases of the injury prevention process.

In many countries, prevention is currently handicapped not just by the lack of basic data and research on injury but also by the lack of intervention trials, economic analyses, programme effectiveness studies, social science research and of health utilization analyses. An overarching challenge is the funding of intervention programmes at a country level.

Prevention

As noted above, the main challenges for child and adolescent injury prevention in low- and middle-income countries, are the development of preventive measures that have been tested and evaluated at the individual or community level and the adaptation of proven preventive measures to local circumstances. In areas of the world where substantial progress has already been made, efforts are required to apply effective interventions more widely. A recent analysis conducted in the United States showed that child and adolescent injury deaths could be reduced by one third if practices that have proved effective in some states were adopted in other similar states (33).

Capacity development

All countries face limitations to their capacity to intervene to prevent injury, to provide emergency and ongoing care following an injury, and to provide appropriate rehabilitation services. This issue is particularly acute for countries where the burden of child and adolescent injury is greatest. In considering ways in which capacity needs to be developed four domains are significant: the building and transfer of knowledge, skills development, strengthening systems and structures, and building effective networks and collaboration. There is an urgent need to train more injury prevention practitioners and researchers across the world, but particularly in low- and middle-income countries. In the case of the latter, incentives may be needed to encourage such professionals to remain in their country of origin and not migrate to high-income countries.

Advocacy

The significance of child and adolescent injury in absolute and relative terms is not always widely appreciated and the potential for prevention is often underestimated. This lack of understanding inhibits the allocation of resources to prevention efforts and also the development of the political and organizational will that is necessary for change.

Those responsible for the delivery of health services and for other relevant public services will not allocate effort or resources to programmes until they are aware that injury is a problem, that it can be prevented and that action will be supported by the community, by administrators and by donors. Demonstrating that resources can be efficiently and effectively used to bring about public health benefits is part of this challenge.

For injury prevention to be successful, injury itself must become an issue for concern, debate and action at all levels, not just at the global level, but at national and local levels too (34).

Despite the many and complex challenges, outlined above, injury prevention nevertheless offers opportunity. The increasing recognition of the public health significance of road traffic injury and violence, coupled with the information, experience and understanding that is currently being developed in all aspects of injury prevention, provides an opportunity to bring about worthwhile and sustainable reductions in child mortality and ill-health throughout the world.

5. WHO's role

The WHO is the United Nations specialized agency for global health. Its objective is the attainment of the highest level of health by all peoples around the world. WHO is governed by 192 Member States, representatives of which meet each year at the World Health Assembly to decide on the direction of WHO's work. The World Health Assembly thus provides a unique platform for the discussion of major public health issues and plays a central role in the development and implementation of strategies for disease prevention, measurement and analysis, research, capacity development, service provision and advocacy. In all of these areas WHO has the capacity to organize, to provide technical support and advice and, through working with its multiple partners, to increase the level of preventive effort worldwide.

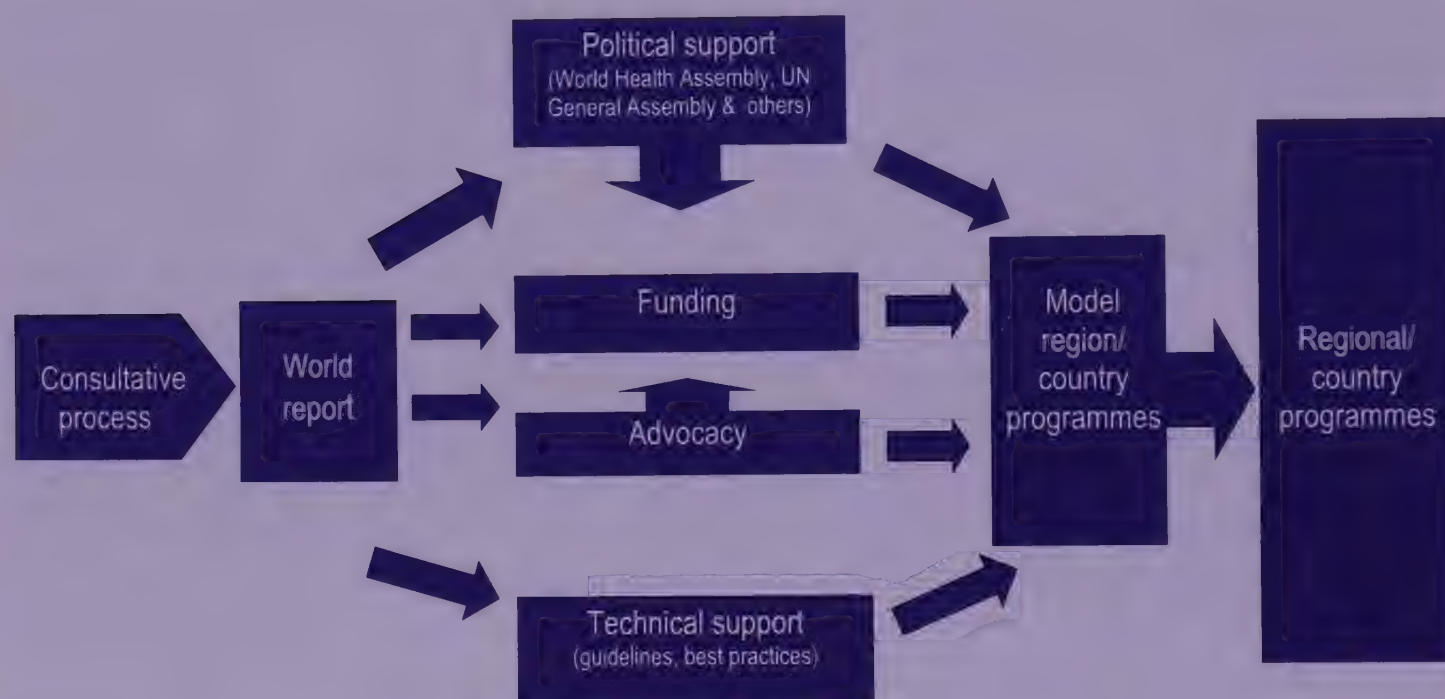
Injuries and violence have been discussed at a number of recent World Health Assemblies with the result that several resolutions mandating WHO to work in the area of violence and injury prevention, disability and rehabilitation have been adopted. WHO's efforts in the area of child injury prevention will follow the public health approach and will attempt to address the knowledge gaps, inequalities and inequities that have been identified. Within WHO, work programmes will seek to make links between injury prevention and other areas of endeavour, such as child and adolescent health, environmental health and health systems development. These will require WHO to engage with a wide range of agencies and nongovernmental organizations (NGOs) and also with broader economic and social issues, such as poverty and poverty reduction.

WHO's Department of Injuries and Violence Prevention acts as a facilitating authority for international science-based efforts to promote safety and prevent violence and unintentional injuries and mitigate their consequences as major threats to public health and human development. It does this by:

- raising awareness and advocating for increased human and financial resources;
- collating, analysing and disseminating global data;

- promoting and facilitating:
 - the improved collection of data,
 - the adoption of best practice,
 - prevention and control at the country level,
 - the provision of services for victims and survivors,
 - teaching and training;
- fostering multidisciplinary collaboration among concerned global, regional and national organizations.

The Injuries and Violence Prevention Department has had substantial success in using a plan of action such as this as well as world reports as a means of collecting and synthesizing available information on a given topic and, more importantly, as a starting point for a longer-term consultative process, the ultimate aim of which is improvements in the degree and quality of preventive efforts for injury and violence at the regional and country level. The main components of the overall process are illustrated in the accompanying diagram. This model has been employed to good effect in the cases of violence and road traffic injuries (12, 35) and will also form the basis of WHO's plan of action for child and adolescent injury prevention. It is a fundamental precept of the model that the work on child and adolescent injury prevention in general, and on the world report in particular, is done in partnership with countries and other agencies.



6. The role of other agencies

Given the multisectoral and multidisciplinary nature of child and adolescent injury prevention, strong partnerships and international cooperation will be required to push for a global injury prevention effort. This view was endorsed at the United Nations Special Session on Children (5), which highlighted the need for child injury prevention efforts to engage as wide a range of individuals and organizations as possible.

UNICEF, the organization that is mandated by the United Nations General Assembly to advocate for the protection of children's rights and to help meet their basic needs (with special commitment to the most disadvantaged children), clearly has an important role to play in taking the injury prevention agenda forward. So too will the many international NGOs, such as the European Child Safety Alliance, the International Society for Child and Adolescent Injury Prevention (ISCAIP), Safekids International and The Alliance for Safe Children (TASC), who are currently actively involved in various aspects of injury prevention, including research, design of interventions and victims assistance.

Part II

The WHO plan of action

This part of the present document sets out what WHO, in consultation with its partner organizations, sees as the important steps towards the goal of containing and reducing fatal and non-fatal injuries among children and adolescents. It is the result of an extensive process of consultation with numerous organizations and individuals concerned with child health, and with injury in particular, including those who participated in the WHO Child Injury Prevention Consultation Meeting, which was held on 31 March 2005. It focuses on those key areas where WHO has a particular contribution to make in relation to injury prevention for children and adolescents.

A ten-year plan (2006–2015) was developed in order to direct WHO's efforts at a country, regional and global level, the principal objectives behind the framework being:

- to build understanding of the nature, extent and preventability of injury;
- to achieve the strongest possible impact by fostering and building partnerships to address injury;
- to foster and build capacity to undertake effective interventions and to evaluate their effectiveness.

Implementation of the strategic plan will require the involvement of all three levels of WHO (i.e. the country and regional offices as well as headquarters) partner organizations and governments. While ministries of health are central to this effort, the engagement of other government departments will also be an important part of the work. Indeed, a wide range of sectors will be consulted. Partner organizations will include those actively involved in child injury and violence prevention and are likely to vary according to the specific issue being addressed. Nongovernmental organizations, networks and advocacy groups, including those concerned with research, health service delivery and evaluation, and disability and rehabilitation will also be involved. The views of children and adolescents will be integrated into the implementation of the plan.

Actions to prevent child and adolescent injuries and violence do not stand alone. Consequently, this plan has been linked to broader efforts to strengthen child and adolescent health, environmental improvements, health system development, data improvement and capacity development.

The framework has six main components or areas of work (see *adjacent table*), which are outlined in further detail below. In each case, a plan of action and the expected outcomes are identified.

WHO plan of action for child and adolescent injury prevention	
1. Data and measurement	
	<ul style="list-style-type: none">• Magnitude and burden• Risk factors• Health impacts
2. Research	
	<ul style="list-style-type: none">• Key research needs• Promotion of intervention trials
3. Prevention	
	<ul style="list-style-type: none">• Stronger prevention programmes• National strategies and planning programmes
4. Services	
	<ul style="list-style-type: none">• Services for persons affected by injury and violence
5. Capacity development	
	<ul style="list-style-type: none">▪ Research effort and capacity
6. Advocacy	
	<ul style="list-style-type: none">• Raising awareness• Promoting and supporting action• International, multisectoral cooperation

1. Data and measurement

Components

Facilitate and enhance the collection and analysis of data on child and adolescent injury and violence (including data on mortality, morbidity, health impacts, disability and associated costs) at the country, regional and global levels.

Identify, collate and improve information on risk and protective factors for child and adolescent injury and violence, including the identification of potential points of intervention.

Plan of action

- Identify existing country-level child and adolescent injury and violence survey and surveillance data for use in Global Burden of Disease (GBD) estimates.
- Support a multicountry study to investigate child and adolescent injury and violence epidemiology, health-care access and outcomes.
- Promote the use of published guidelines, such as the *WHO Injury surveillance guidelines* (36) and the *Guidelines for conducting community surveys on injuries and violence* (37), in countries.
- Promote the use of standardized injury and violence classification systems such as the International Classification of Disease, version 10 (ICD-10) and the International Classification of External Causes of Injury (ICECI).
- Promote links between injury and other areas of work by contributing to mechanisms such as the global initiative on children's environmental health indicators.
- Develop a standard tool for estimating the cost of injury and violence.
- Develop estimates of the disability effects of child and adolescent injuries and violence.
- Promote the inclusion of injury- and violence-related questions in national demographic health surveys and other surveys.

Expected outcomes

- Improved GBD estimates on child and adolescent injuries and violence.
- Multicountry comparisons on the epidemiology, risks, health impacts and health-care access of child and adolescent injuries and violence.
- Global child and adolescent injury and violence estimates for inclusion in the forthcoming world report on child and adolescent injury prevention.
- Country case studies for inclusion in the forthcoming world report on child and adolescent injury prevention.
- Guidelines on the estimation of the impact and cost of injury and violence.
- A WHO "data kit" to guide decision-makers and practitioners on data gathering activities.
- Child and adolescent injury- and violence-related disability estimates for the forthcoming world report on disability and rehabilitation.

2. Research

Components

Identify key research needs in the field of child and adolescent injury and violence prevention, set an agenda of priorities, and ensure that information on these priorities is available to researchers, governments, donors and other stakeholders.

Promote and foster trials of promising interventions for preventing injury among children and adolescents in high burden regions.

Plan of action

- Develop a research agenda for child and adolescent injury and violence prevention, which includes a list of high priority research questions and potential research projects, by holding a series of leading edge workshops involving relevant experts and partners.
- Promote and support network(s) for information exchange and debate on matters relating to child and adolescent injury and violence prevention.
- Promote and provide technical support for research into promising child and adolescent injury and violence prevention interventions.
- Promote increased funding for research as an investment in injury reduction.

Expected outcomes

- Publication of key research needs, a research agenda, and lists of high priority research questions and potential research projects.
- Regional networks for the exchange of information relating to child and adolescent injury and violence prevention.
- A set of model countries for piloting and evaluating good practice in child and adolescent injury and violence prevention.
- Additional research funding for child and adolescent injury and violence-related projects.
- A web site of research priorities and needs in the field of child and adolescent injury and violence prevention.

3. Prevention

Components

Support the development of stronger and more effective injury and violence prevention measures and programmes in all countries.

Increase the number of countries with national strategies and programmes for preventing injuries and violence among children and adolescents.

Plan of action

- Identify existing country-level studies on the effectiveness of interventions to prevent child and adolescent injuries and violence, particularly from low- and middle-income countries.
- Develop good practice guidelines for injury prevention among children and adolescents.
- Provide technical support to countries for the implementation of the WHO child and adolescent injury prevention plan of action.
- Provide guidance and technical support on how to implement the recommendations of the planned world report on child and adolescent injury prevention.
- Provide guidance on how to integrate child and adolescent injury and violence prevention into other areas of health promotion, in particular, child and adolescent health and environmental health.

Expected outcomes

- Good practice guidelines on child and adolescent injury and violence prevention.
- Guidelines on how to implement the recommendations of the planned world report on child and adolescent injury prevention.
- Promotion and support for the development of multisectoral partnerships in injury and violence prevention.
- Guidelines on developing national policies for injury and violence prevention that include consideration of the specific needs of children and adolescents.
- Technical support to countries and regions to develop plans for injury and violence prevention that include children and adolescents.
- Technical support to countries to implement the recommendations of the planned world report on child and adolescent injury prevention.
- A set of model countries for implementing and evaluating good practice in child and adolescent injury and violence prevention.

4. Services for children affected by injury and violence

Components

Promotion of local, national and cross-national services for persons affected by injury and violence.

Plan of action

- Provide technical input to networks and organizations that provide support and services to children affected by injury and violence.
- Provide technical support to model countries to implement the existing WHO guidelines on *Prehospital trauma care systems* (38).
- Provide technical support to model countries to implement the existing WHO *Guidelines for essential trauma care* (39).
- Provide technical support to model countries to implement the existing WHO *Guidelines on the medico-legal care of victims of sexual violence* (40).
- Identification of good practice in the provision of services for those affected by injury and violence.

Expected outcomes

- Training programmes in prehospital trauma care systems and essential trauma care.
- The development of model national programmes for the care and rehabilitation of injured children and adolescents.
- Better services for those affected by injury and violence.

5. Capacity development

Components

Capacity development for data collection and the prevention of child and adolescent injuries and violence.

Plan of action

- Facilitate the roll out of TEACH-VIP – an injury and violence prevention curriculum for public health students – in low- and middle-income countries.
- Development of an advanced module on child and adolescent injury and violence prevention for TEACH-VIP.
- Ensure that child and adolescent injury and violence prevention is included in the WHO mentoring programme for injury and violence prevention.
- Provide seed funding and technical support to networks that promote injury-related research in high priority issues and prevention in high burden countries.
- Facilitate regional meetings or conferences on injury and violence prevention that incorporate child and adolescent issues.
- Promote the provision of scholarships to conferences and training programmes that will build capacity and foster collaboration between countries and regions.

Expected outcomes

- TEACH-VIP training programme integrated into public health master degree courses in a greater number of low- and middle-income countries.
- A child and adolescent injury and violence prevention advanced module integrated into TEACH-VIP curriculum.
- Increased human capacity for child and adolescent injury and violence prevention.
- Regional conferences and workshops that include child and adolescent injury and violence prevention components.
- Injury and violence research and prevention networks in low- and middle-income regions.

6. Advocacy

Components

Raise awareness and interest in the impact of child and adolescent injury and violence through the development and circulation of information.

Promote action on child and adolescent injury and violence prevention, principally through the fostering of political will and the generation of resources to address these issues.

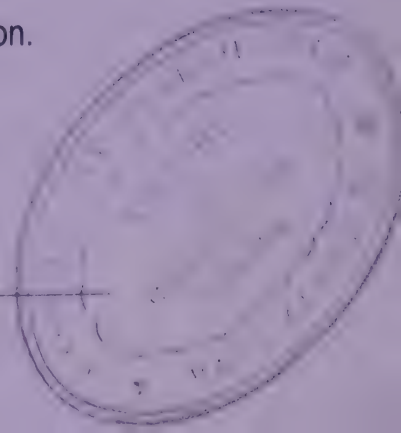
Develop and foster international, multisectoral cooperation on injury and violence prevention relating to children and adolescents.

Plan of action

- Develop and implement an advocacy strategy for the launch and follow up of the planned world report on child and adolescent injury prevention.
- Promote awareness of child and adolescent injury and violence prevention among policy-makers and donor agencies.
- Develop easily understood, evidence-based messages on the problem of, and solutions for, child and adolescent injuries and violence.
- Advocate for the inclusion of child and adolescent injury and violence, disability and rehabilitation in international forums relating to child health and well-being.
- Foster the involvement of NGOs in the promotion of child and adolescent injury and violence prevention initiatives.
- Advocate for the nomination of injury and violence prevention focal points in ministries of health.
- Encourage the implementation of the recommendations of the United Nations Secretary General's Study on Violence against Children, which is currently underway.
- Advocate for resources for child and adolescent injury and violence prevention among multi- and bi-lateral donors, foundations, national governments, local agencies and the private sector.
- Foster collaboration among organizations that are concerned with child and adolescent injury and violence prevention, including WHO collaborating centres and other intersectoral networks.
- Participate in international planning and forums relevant to child and adolescent injury and violence prevention, including the world conferences on injury prevention and safety promotion.
- Identify a high profile "champion" for child and adolescent injury and violence prevention.

Expected outcomes

- Launches of the forthcoming world report on child injury prevention by high level officials.
- Inclusion of child and adolescent injury and violence prevention on major political agendas and at high profile injury prevention conferences.
- Fact sheets and other advocacy documents and tools for child and adolescent injury and violence prevention, e.g. the WHO/UNICEF *Child and adolescent injury prevention: a global call to action* (34).
- Statements in support of child and adolescent injury and violence prevention by political and opinion leaders.
- Focal points for injury and violence prevention in ministries of health around the world.
- Increased funding from donors in support of child and adolescent injury and violence prevention.
- A WHO child and adolescent injury and violence prevention web site.



7. Conclusion

We know from the experience of high-income countries that child and adolescent injuries and violence can be prevented and that many of the children who die or become disabled every day could be saved. What is required to make this happen is political commitment and resources. WHO is committed to addressing the problem and will push the agenda forward by advocating at the global and regional level, by encouraging donors to support efforts to reduce the magnitude of the injury burden, and by promoting research and prevention activities worldwide.

This is the first global WHO plan of action on child and adolescent injury and violence prevention. Its implementation is going to require multisectoral efforts and strong partnerships as well as international cooperation and donor support. Ministries of health in Member States, WHO collaborating centres and other partner agencies, and NGOs will all be instrumental in supporting this work.

The present document is not intended to be exhaustive. Despite being drafted following extensive consultation, it is acknowledged that some components of the plan of action set out herein may yet require modification or amendment, especially in light of the diversity of child and adolescent injuries and violence within regions and countries. Nevertheless, the present document will be the main guide to WHO and its partners as they collectively begin to address the issue of child and adolescent injuries and violence in Member States over the next 10 years.

In a nutshell:

- Many children die unnecessarily from injuries and violence every day;
- Developing countries bear a disproportionate share of the problem;
- Injuries and violence can be prevented;
- Political commitment and resources are needed to move the injury prevention agenda forward and reduce the number of preventable deaths.

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Annex 1: WHO child and adolescent injury prevention plan at a glance

DATA AND MEASUREMENT		
Components	Expected outcomes	Time frame
Facilitate and enhance the collection and analysis of data on child and adolescent injury and violence (including data on mortality, morbidity, health impacts, disability and associated costs) at the country, regional and global levels.	<ul style="list-style-type: none"> ➤ Improved GBD estimates on child and adolescent injuries and violence. ➤ Multicountry comparisons on the epidemiology, risks, health impacts and health-care access of child and adolescent injuries and violence. ➤ Global child and adolescent injury and violence estimates for inclusion in the forthcoming world report on child and adolescent injury prevention. ➤ Country case studies for inclusion in the forthcoming world report on child and adolescent injury prevention. 	Ongoing 2006–2008 2006–2008 2006–2008
Identify, collate and improve information on risk and protective factors for child and adolescent injury and violence, including the identification of potential points of intervention.	<ul style="list-style-type: none"> ➤ Guidelines on the estimation of the impact and cost of injury and violence. ➤ A WHO “data kit” to guide decision-makers and practitioners on data gathering activities. ➤ Child and adolescent injury- and violence-related disability estimates for the forthcoming world report on disability and rehabilitation. 	2006–2007 2006–2007 2006–2009

RESEARCH		
Components	Expected outcomes	Time frame
Identify key research needs in the field of child and adolescent injury and violence prevention, set an agenda of priorities, and ensure that information on these priorities is available to researchers, governments, donors and other stakeholders.	<ul style="list-style-type: none"> ➤ Publication of key research needs, a research agenda, and lists of high priority research questions and potential research projects. ➤ Regional networks for the exchange of information relating to child and adolescent injury and violence prevention. ➤ A set of model countries for piloting and evaluating good practice in child and adolescent injury and violence prevention. 	2006–2007 2006 onwards 2006–2009
Promote and foster trials of promising interventions for preventing injury among children and adolescents in high burden regions.	<ul style="list-style-type: none"> ➤ Additional research funding for child and adolescent injury and violence-related projects. ➤ A web site of research priorities and needs in the field of child and adolescent injury and violence prevention. 	2006–2008 2006 ongoing

PREVENTION		
Components	Expected outcomes	Time frame
<p>Support the development of stronger and more effective injury and violence prevention measures and programmes in all countries.</p> <p>Increase the number of countries with national strategies and programmes for preventing injuries and violence among children and adolescents.</p>	➤ Good practice guidelines on child and adolescent injury and violence prevention.	2006–2007
	➤ Guidelines on how to implement the recommendations of the planned world report on child and adolescent injury prevention.	2008–2009
	➤ Promotion and support for the development of multisectoral partnerships in injury and violence prevention.	2006 ongoing
	➤ Guidelines on developing national policies for injury and violence prevention that include consideration of the specific needs of children and adolescents.	2006–2008
	➤ Technical support to countries and regions to develop plans for injury and violence prevention that include children and adolescents.	2006 ongoing
	➤ Technical support to countries to implement the recommendations of the planned <i>World report on child and adolescent injury prevention</i> .	2008 onwards
	➤ A set of model countries for implementing and evaluating good practice in child and adolescent injury and violence prevention.	2007 ongoing

SERVICES FOR CHILDREN AFFECTED BY INJURY AND VIOLENCE		
Components	Expected outcomes	Time frame
Promotion of local, national and cross-national services for persons affected by injury and violence.	➤ Training programmes in prehospital trauma care systems and essential trauma care.	2006 onwards
	➤ The development of model national programmes for the care and rehabilitation of injured children and adolescents.	2008 onwards
	➤ Better services for those affected by injury and violence.	2006 onwards

CAPACITY DEVELOPMENT		
Components	Expected outcomes	Time frame
Capacity development for data collection and the prevention of child and adolescent injuries and violence.	➤ TEACH-VIP training programme integrated into public health master degree courses in a greater number of low- and middle-income countries.	2005 ongoing
	➤ A child and adolescent injury and violence prevention advanced module integrated into TEACH-VIP curriculum.	2007
	➤ Increased human capacity for child and adolescent injury and violence prevention.	2007 onwards
	➤ Regional conferences and workshops that include child and adolescent injury and violence prevention components.	2006 ongoing
	➤ Injury and violence research and prevention networks in low- and middle-income regions.	2006 onwards

ADVOCACY		
Components	Expected outcomes	Time frame
Raise awareness and interest in the impact of child and adolescent injury and violence through the development and circulation of information.	➤ Launches of the forthcoming world report on child and adolescent injury prevention by high level officials.	2008–2009
Promote action on child and adolescent injury and violence prevention, principally through the fostering of political will and the generation of resources to address these issues.	➤ Inclusion of child and adolescent injury and violence prevention on major political agendas and at high profile injury prevention conferences.	2006 ongoing
	➤ Fact sheets and other advocacy documents and tools for child and adolescent injury and violence prevention, such as the WHO/UNICEF <i>Child and adolescent injury prevention: a global call to action</i> .	2006 onwards
	➤ Statements in support of child and adolescent injury and violence prevention by political and opinion leaders.	2006 onwards
Develop and foster international, multisectoral cooperation on injury and violence prevention relating to children and adolescents.	➤ Focal points for injury and violence prevention in ministries of health around the world.	2006–2008
	➤ A WHO child and adolescent injury and violence prevention web site.	2006 ongoing
	➤ Increased funding from donors in support of child and adolescent injury and violence prevention.	2006 ongoing

"We have had great success in fighting diseases that kill and maim children. We can't now sit and watch children die or become severely disabled due to injuries that can be prevented. It is time to take an active approach to preventing child injuries."

Dr LEE Jong-wook, Director-General, WHO



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